SHAPE OPERATOR OF SLANT SUBMANIFOLDS
IN KENMOTSU SPACE FORMS

XIMIN LIU*, AIQI WANG AND Aimin Song

Communicated by Karsten Grove

Abstract. In this paper, we establish some relations between
the sectional curvature and the shape operator and also be-
tween the $k$-Ricci curvature and the shape operator for slant
submanifolds in Kenmotsu space forms.

1. Introduction

According to B.Y. Chen, one of the basic problems in submani-
fold theory is to find simple relationships between the main extrin-
sic invariants and the main intrinsic invariants of a submanifold.
Scalar curvature and Ricci curvature are among the main intrinsic
invariants, while the squared mean curvature is the main extrin-
sic invariant. In [4], B.Y. Chen establishes a relationship between
sectional curvature function $K$ and the shape operator for submani-
folds in real space forms. In [5], he also gives a relationship between
Ricci curvature and squared mean curvature.

MSC(2000): Primary 53C40; Secondary 53C15
Keywords: Kenmotsu space form, Mean curvature, Shape operator, $k$-Ricci curvature,
Slant submanifold
Received: 14 July 2004 , Accepted: 8 May 2005
*Corresponding author.
© 2004 Iranian Mathematical Society.

81